

**Admiral John Richardson**  
**New America - Future of War**  
**10 March 2016**

**Moderator:** I was reading through what is in effect your plan, right, for the Navy in maintaining maritime superiority for decades to come. And you, like for instance whenever I speak to intel officials, you, you name Russia and China at the top of your list of strategic challenges going forward, just in terms of potential adversaries.

I wonder if you could start with Russia then, as someone with a little bit of experience on submarines, Russia's increased activity all around, certainly in the air, but at sea and under the sea. What is it up to? What do you think its objective is as it pushes the limits?

**Adm. Richardson:** Well, just to kind of fall in on your question a little bit, the activity has been brisk from Russia at sea and other places, as you know. And what we're seeing is activity levels at sea that we haven't seen since the mid-1990s -- that's both on the sea and under the sea and over the sea.

It seems that, of course I'm just giving you my best guess, but certainly they have demonstrated a lot of sort of new technologies for the first time. So with respect to their undersea capabilities, you know, we've seen them launch cruise missiles from submarines into Syria. We've seen them not only stand up and test but deploy, not start to deploy their new class of SSBNs, the Dolgoruky Class. They've got a guided missile submarine that's coming on line. So they, as they reconstitute their undersea forces with a new generation of technology they're getting those out and they're using them.

You've seen them shoot you know, long range land-attack cruise missiles from the Caspian Sea. So they're really getting a chance to try out all these new technologies, to field test them, if you will.

Then clearly they're back in the Middle East in a major way. So just as a start it seems like if you were thinking

about two goals, those are two pretty important goals that they're taking a swing at.

**Moderator:** So Syria, testing new technologies. But particularly up in the North Sea, testing NATO's response. Is it your view that the objective here coupled with activity in Ukraine and elsewhere, is it to undermine NATO?

**Adm. Richardson:** I think that there's a dimension of that. Really, it's to, it's always contest I guess, right? And so as this pitches back and forth what we've seen is that, in a number of contexts for both Russia and China, they seem to have found a way to move this competition forward in a manner that is just below sort of the traditional levels of conflict and achieve progress there in ways that, you know, non-traditional, below the thresholds of what you might want to call a kinetic response. So I think that's an area where we've got to be very creative in terms of how we move forward. You know, it's discussed in our plan.

**Moderator:** So how do you articulate the strategy for responding to that, just below the threshold? As you know, there's a perception, you hear it in Europe, you hear it in the Middle East, you hear it in Asia, that the U.S. is getting beat. China and Russia are successfully testing the limits and pushing the limits and that the U.S. either doesn't have the, you know, the backbone to respond or the strategy or is disengaged or doesn't want to get involved in another conflict. I mean you've heard that perception.

Can you articulate how the U.S. responds to that strategy from both Russia and China?

**Adm. Richardson:** I think that a big part of our response would be to realize that this is not just military and not just U.S.. And so it's, it seems that in particular these types of challenges are open to sort of a whole of government type of approach and part of that will include you know, strengthening those regional security architectures, working with our partners, with our allies, to make sure that you know, we build up their resistance to these types of behaviors so that we're not so susceptible to these types of activities.

**Moderator:** I was speaking to a French diplomat, this was just a couple of weeks ago, and he was describing Putin as

a gambler. And you'll often hear folks say well he doesn't really have a strategy, he's a tactical thinker, he's just pushing here and there and pushing buttons, but as a diplomat, as a bit of a historian on Hitler -- and he made the comparison, not me -- but he was saying the Russians make gambles and if one works they'll do the next one and kind of you know, then you begin to think, and he raised this, then you begin to think sort of Hungary, Czechoslovakia, and at some point, you know, it's above the threshold.

I just wonder from your perspective when you look at that adversary, are you concerned that, particularly if they don't have a plan, that it could escalate beyond that threshold?

**Adm. Richardson:** I think we have to be careful not to over-simplify, you know, any of our adversaries and dismiss them. I think in general they're rational actors from their perspective and what they're doing makes a lot of sense from their perspective, and so seeking to understand what that perspective might be that's where I think we need to spend more effort.

It is always a gamble, isn't it? None of the outcomes are foregone conclusions moving forward. Even some of the things that we would argue are some of our greatest successes in kind of manifesting and bringing the Cold War to a close. Those were far from certain outcomes when we were going through them. So there is this sort of element of uncertainty, always.

And it kind of goes to, you know, you said this is our plan for the next ten years. It's really, you know, we use this word design on purpose, right? Because as things accelerate I think it's getting more and more challenging to see further and further into the future. Right? So I would say this is not a ten-year plan. This is version 1.0 of a plan. We're going to do our best to characterize the environment, we're going to do our best to put a plan together, then we're going to step forward, and the first thing you've got to do is measure to see are you having the effect that you designed, that you intended? Just because it's very complex, it's moving very fast. So you've got to be already to adjust either your understanding of the environment or your plan or even your goals as you step

forward.

So there's a lot of uncertainty and I think this kind of measuring as you go and adapting as you go is fundamental to our use of the word design rather than plan.

**Moderator:** What do you place the chances of war with Russia in the next ten years?

**Adm. Richardson:** I think it's small.

**Moderator:** Is it --

**Adm. Richardson:** I want to be the world's expert at not going to war with Russia and China.

**Moderator:** Let's talk about China then, and the South China Sea and responding to its moves there. I was lucky enough to get to fly over the man-made islands a year ago and see just one, well hear their response as the U.S. flies over there. They treat it like their own territory, right? Their own airspace. But also see how quickly, and we know how quickly they built these places up. And since then we've seen deployments of you know, these mobile missile launchers, and you've got a completed runway on some of them.

What is China's end game, in your view?

**Adm. Richardson:** I think that's one of the issues, is it's really hard to discern what the end game is. There's a lot of opaqueness with respect to their intentions. And that's why not only we but a number of the countries in that region are growing increasingly anxious about what is the intention.

We would continue to advocate and support what I would say is an order in that region of the world and around the globe, but an open architecture order, right, that gives everybody who wants to participate sort of as level a playing field to succeed as possible. That system, which has essentially been in place for the last 70 years, has given many nations including a lot in that region, you know, just great prosperity over that period of time. We would advocate that that's the way to go going forward into the future.

While it's hard to predict exactly what the intentions are, that's the hardest thing, right? Intentions. It seems that there may be sort of a tendency for an ordered but maybe not so open architecture, right? So sort of a closed order approach. You kind of come through, hey, we claim these areas. You come through on our permission, if you will. So we just want to continue to do the sorts of activities that advocate for this open architecture, level playing field approach. That's the set of global rules and norms that have been in place.

And it's not just there. It's important to keep in context, for instance our Freedom of Navigation program. It's worldwide, you know, but of course the South China Sea is getting a lot of attention right now.

**Moderator:** Is part of that learning to live with China's new claims? You can still sail the ships, you can do the occasional Freedom of Navigation run, but at the end of the day they have these unsinkable aircraft carriers, right, as people have called them, you know in the Paracels and the South China Sea and the Fiery Cross Reef. All those places. They have them already, and they don't seem to be going anywhere.

**Adm. Richardson:** Well, they're not going to go anywhere.

**Moderator:** We've got to live with them, right?

**Adm. Richardson:** Yeah, you do. But how that proceeds going forward, what is the rule set that governs behaviors in that part of the world. That's where I think we have to, I mean certainly, you know, China's a growing nation, a very complex nation, and we want to get to an end state where it is open architecture, right? So everybody's got a chance to compete and do everything we can to avoid conflict as we exercise that competition.

**Moderator:** Part of your design speaks about the freedom, to some degree, that commanders have when deployed to make decisions.

**Adm. Richardson:** Right.

**Moderator:** And you have multiple scenarios here where a

commander can find himself in a situation. If China, for instance, decides to head off a Freedom of Navigation operation, that kind of thing. What do you tell them to do?

**Adm. Richardson:** The idea is that we give them commander's intent, but we also understand that nobody's going to get the full essence of that situation better than that commander who's on that ship exercising that operation. And so what this requires really is a lot of conversations, to be honest, between commanders and their subordinates to make sure they understand sort of what the full intent is. How you would respond or how one should react in the face of kind of any unanticipated situation. Right? We're never going to be able to cover every contingency, so it's very important that you understand the risk calculus that's in play. And then you have to delegate to that commander and expect them to do the right thing.

You know, enhancing that too. We've been working very closely with the Chinese and other nations in that region to establish a rule set for encounters at sea and encounters in the air, and we've been seeing increased cooperation, increased use of that rule set. So we'll continue to advocate it.

Again, going back to the sort of rules-based approach. We've got these pre-planned responses for these unplanned encounters at sea, and by and large, there's more and more abiding by that rule set as we go forward.

**Moderator:** Things like bridge to bridge communications you mean.

**Adm. Richardson:** Bridge to bridge communications, how we should maneuver, you know, just how we should set up these encounters so that we don't have something unexpected happen. As well, I've got good communication with my counterpart. I think that those are very important so that in the event something happens that raises some questions, we can get in touch with one another and I think that those are very important to prevent sort of unanticipated or unwanted escalations.

**Moderator:** Oftentimes when there's greater domestic instability that increases the risk of digging in their

heels, right? To some degree. As you watch China's own domestic issues, the economy, et cetera, in your view does that increase the risk of a confrontation?

**Adm. Richardson:** It's hard to determine. Certainly they've got a lot on their plate. How all of this figures in I think is an important part of that. But I would always advocate that it's our job to open up decision space for our leaders. We do that by behaving predictably in a de-escalatory fashion. So as I talk to my counterparts around the world, that's sort of what I'm advocating for. If we escalate it tends to collapse decision space, doesn't it? And force us to something. That's not our job. Our job is to provide our leadership with more credible options, not fewer.

**Moderator:** Two other countries you mentioned, not surprising, Iran and North Korea. So North Korea is a country, it doesn't have the naval presence. It certainly has a growing missile capability. You certainly don't have the kind of communication you have with the Chinese. What is your level of concern as North Korea becomes more emboldened and you begin to worry that under this nuclear umbrella that then their conventional operations could become more aggressive? What's your level of concern with North Korea?

**Adm. Richardson:** I think everybody that's involved with that has a high level of concern, just because of the unpredictability involved, and combine that with the capabilities that they've demonstrated. It makes for a very very volatile situation. And the only thing that seems to be predictable is that they will be sort of very provocative, right?

So this is again, the work of General Scaparrotti, Admiral Harris. You know, they've got to kind of maintain that level of alertness. Certainly the response times are very short in some of the scenarios there. But they've also got to maintain you know, a little bit of time to reflect and calm things down. That's a tough problem in terms of just the time frames involved.

**Moderator:** Can the North Koreans, I mean they've demonstrated a capability to launch missiles from a sub. How close are we to a nuclear capable North Korea in terms

of miniaturizing, I know the intel view is that we have to assume that they've already been able to miniaturize, but when does North Korea in your view become a fully nuclear capable threat?

**Adm. Richardson:** They're working on the submarine and we're watching that closely. Certainly they've got land-based types of options as well. So it's hard to put a time line on these things just because there's a tremendous amount of opacity there. So you have to sort of bias towards the conservative.

**Moderator:** But it seems that the U.S. is just waiting for that possibility. And like another one that it's going to decide it has to live with.

**Adm. Richardson:** We're certainly working a lot with our partners and others in the area to kind of bring to bear as much pressure on that situation as we can.

**Moderator:** Iran. What's the function of the various provocations we've seen recently? The ballistic missiles is one thing, but firing off the rockets by U.S. warships. You know, some of this is predictable. But do you, post nuclear deal do you find Iran emboldened perhaps? Or less of a threat. Particularly just to U.S. ships operating in the Gulf.

**Adm. Richardson:** I think that with respect to what we do in the Gulf, really nothing has changed by virtue of this agreement except that we can be more confident that a nuclear type of a capability is off the table for now. But their biggest ally is the geography there, right? Everything is in such close quarters.

I just came back from that theater, and they remain as alert as ever. Our job in that part of the world has not really changed so we're watching it very closely

The Iranian activity of that type sort of ebbs and flows over time and we're not seeing anything tremendously out of that normal kind of ebb and flow right now.

**Moderator:** I see.

Can you talk at all about the sailors and their getting too



close and their capture? We've seen, and we have some reporting on the results of the investigation, the after-investigation. But was this purely the sailors' mistake?

**Adm. Richardson:** Yeah, I think that to get into those types of details would be premature right now. The investigating officer is pretty much finished with his work and now it's in review. You know, how those reviews go. There's always, hey, what about this? What about this? So we're in that process right now.

It's a very complicated investigation, as you can imagine. Hundreds of interviews. And it's going to take us a little bit of time to get through all that to make sure we've got, you know, a complete picture. So when we start talking I want to be as up front as we can.

**Moderator:** I understand.

Let me just ask you this, then. How nervous were you when you got the call that these sailors had been captured?

**Adm. Richardson:** Nervous. But on the good side, it was resolved pretty quickly. Right? So in 16 hours we had them back so we're very grateful for everybody's efforts. Secretary Kerry and everybody who was involved in getting them back.

**Moderator:** Have you met with them? With the sailors?

**Adm. Richardson:** No, I haven't had a chance to meet them.

**Moderator:** I'm going to ask you a political question and I can assume you won't answer, but I just have to ask you as a military man who's served for the number of years that you have. And I know to some degree the way the military or military options are talked about in any political campaign invariably, you know, it can get off the rails. But this time by any stretch of the imagination it's more so. Things like telling soldiers to disobey the law, you know, talking about carpet bombing, that kind of thing.

As a military man, do you look at that with any, I won't say alarm. It's too strong of a word. But does it upset you to hear that kind of talk?

**Adm. Richardson:** I think it's our job no matter who becomes the Commander in Chief, to make sure that we are thoughtful, certainly, and that we provide the absolute best advice that we can with respect to the employment of the military element of national power. So just by virtue of whatever personal experience the different candidates may have, they may have more or less familiarity with what that entails, and so I think myself and a lot of others are giving a lot of thought in terms of how to couch that advice, what are going to be those initial briefs to make sure that we're best postured to provide that advice.

That's one of the virtues of our system is that you get this sort of peaceful transfer of power, you get a military that's controlled by civilians and that will be the way it is going forward.

**Moderator:** One final question from me because I've got to allow --

**Adm. Richardson:** First, I've got to stop. So it's the Future of War and we're getting into all these political questions.

**Moderator:** Just one.

**Adm. Richardson:** And I know it's your birthday, but you're putting me after the cyber rifle guy, which I don't know how I'm supposed to compete with that. [Laughter]. I'm starting to feel a little bit, now I'm starting to get nervous. [Laughter].

**Moderator:** These guys love toys.

One big picture question before we go to the audience and that is, a lot of the trends you talk about in here, you know, just the proliferation of technology, how quick technology is changing. A lot of this feeds the asymmetric nature of warfare. And folks that can, countries, they think about this, strategize about neutralizing American military advantages, particularly when we talk about naval advantage. Russia, certainly China. It's part of their whole strategy.

Bic picture. Is the U.S. keeping up with that fast enough to maintain superiority? Maritime superiority.

**Adm. Richardson:** I would say the big message out of you know, this design is, it not only talks about the competitors, and we've spent a fair time today talking about the competitors in the contest. But the character of the contest has changed and so the, and the biggest change I think is pace. The rate at which things are changing. While we still enjoy a margin of superiority right now, I would argue that if we don't pick up the pace we will certainly not meet our potential and worse, may fall behind our competitors. So we've got a lot of things that we're doing to try and increase the pace at which we develop concepts, increase the pace at which we bring in new technologies. There's a real harmony that can be developed if you do it right between concept development and technology development. One sort of feeds the other, you know, when you get it going just right.

So there is this idea of pacing.

The other idea is that resources for the foreseeable future are going to be about flat if not declining. That would, we would be I think overly optimistic if we didn't at least plan for that contingency. So how do you get at it? You've got a more complicated security environment in terms of the character of it. You've got more competitors in the contest.

There is also this element of not only going, speeding up the pace, but also looking to combine things in new and creative ways. There's a good rich history in military history of not necessarily the new piece of technology, but combining that creatively with another piece of existing technology and those types of combinations can make all the difference. Most of the time people talk about technology kind of approaching an exponential curve, but these combinatorics can even beat that if it's done cleverly.

So in terms of achieving your potential, improving your performance, it's a combination of picking up the speed for certain, but also combining things in more creative ways.

**Moderator:** Gotcha.

I wanted to leave 15 minutes for questions, and we've got 15 minutes. So I'll just open up to the audience.

**Audience:** Steve Winters, independent consultant. Thank you so much for the talk.

I just have a small question, but I've heard so much about the third offset strategy, I've heard Secretary Hagel talk about how he had initiated those ideas a few years ago, and then I've heard Secretary Work explain it. It's so impressive.

But I just wonder in terms of calling it an offset strategy, when I read the Russians', Putin describing his attempts to jump-start technology, and he has a whole list of critical technologies for military that they're pushing development on. It seems to me that both the Russians and ourselves are essentially doing the same thing. So to call it an offset strategy, we're not offsetting the Russians, we're competing with the Russians in the same idea.

Could you elaborate on that?

**Adm. Richardson:** Well I think what you're talking about is sort of the fundamental nature of this contest, right? So this is a contest between two thinking adversaries that are both trying to outwit the other, and so we should not be surprised that they've got their plan. They want to checkmate us even as we're trying to checkmate them. So too often, you mentioned there are these technologies out there that may be rendering our military irrelevant. Well certainly, of course they're going to target our vulnerabilities. We would be shocked if they did anything differently, right? But it's not just a one-way game. So as they are executing their strategy we are executing ours. And so it's this back and forth. There's nothing new about that. That's fundamental to the nature of the contest.

**Audience:** Good afternoon, sir. [Inaudible], National Security Project.

I wanted to ask the question, as a submarine officer what is your thought about the future aircraft carriers? Talking about how the SecDef has put out there saying that the Ford Class may be the last type of its class where we have manned aircraft and large aircraft carriers as the Ford is being designed. What do you see as the vision for the next level of aircraft carriers and air warfare in the Navy?

**Adm. Richardson:** That's a giant question. I think the Secretary said that the Joint Strike Fighter might be the last manned aircraft of its type that we [send]. Just to be a little bit precise there.

I think that this is one area where we'll just have to see where the technology takes us, right? Right now I'm not ready to bet 100 percent that we're going to get there by the next generation. We've just started those studies to see what will be the next thing in terms of achieving air dominance.

What I want to do though now, with respect to just the aviation piece, is get going. We've sort of thought about this long enough and I want to get an unmanned aircraft on the deck of the carrier and it's got a legitimate mission, right? It's not just a prototype out there. So for ISR and tanking, those are things that will make a legitimate contribution to the air wing and we will learn so much about what it takes to integrate unmanned into the air wing. So that's kind of one effort, just the operational effort.

Then in parallel, we're watching the technology. More than watching, participating in developing the technology. So we will migrate that over as it matures to make sure that this aircraft continues to improve in capability as the technology matures and allows us to do that.

The learning cycle I want to be very very short, right? So we'll get out there now with something and we'll start learning. As technology becomes available, we'll incorporate that and we'll learn again. I don't want to try and predict 10, 20 years from now what will be the right answer because it's just becoming amazingly hard to predict 20 years into the future right now.

So the answer to that for me is having shorter learning cycles so that we can follow that potential curve a lot more closely.

With respect to the aircraft carrier itself, there are a number of studies that we have going on right now to look at how that all should be going forward. I'm eager to see what the results of those are. We'll go where the data

takes us. And we'll see what happens.

**Audience:** Thank you, Admiral Richardson. Thanks so much for being here. I just have to tell you, you're all over Twitter. There's this conference and then there's those of us who are on Twitter, and it's --

**Adm. Richardson:** That really scares me. [Laughter].

**Audience:** I have to say, it's something to hear the CNO sounding like an entrepreneur with a lean startup because your language is very much that of a lean startup.

But you just mentioned something about checkmate, and we think about checkmating them and they think about checkmating us, and that's the traditional chess board strategy of great power war.

But we heard Susanne Spalding yesterday, Under Secretary for DHS, talk about a network strategy and building a network of networks, and how you do that. We were talking about cyber security. So that you know, any time there's any attack anywhere in the network the entire network knows what that is.

I just wondered if you could talk to us a little bit about the way you're also thinking in network terms which is really quite different than sort of the traditional chess board.

**Adm. Richardson:** Thank you. And there's also the crowd that says hey, that's very Western to think of chess, but in the Eastern contest we're thinking about Go, right? I'd also note that a computer just beat the Go champion, so it is a rules based structure at the end of the day, and we're getting better at figuring that rule set out.

I'll tell you, we have a number of efforts going on right now that I'm looking at integrating. One goes by the name of Distributed Lethality, so we've got some things going on in that direction, and that's sort of how to stitch in surface forces in more creative ways. We have another, it's sort of Integrated Fire Control - Counter Air, NIFC-CA if you are an acronym person. And so that's how to integrate in the naval aviation context.

I zoom out from that and I see a space where it is kind of a network of networks, where any one of our sensors can share its data to the highest level of precision, right? Targeting data if need be, with any one of our platforms which carries a host of I would say payloads, right? Weapons and electromagnetic warfare and cyber effects.

So if you think of that space, you know, these axes of sensors and platforms and payloads, wherever you can connect those you start to build a network of networks, and that I think becomes not fragile, but actually resilient. Right? So if a particular option goes down, well, you've got a number of other options that can come up and you get this sort of graceful degradation and restoration going on. So that's where I'm trying to move.

It's very complex when you get to that level. So some of these technologies that are right around the corner -- artificial intelligence, the types of computers that beat Kasperov in chess and beat the Go champion, you know, how can they help us think through these types of decision matrices that accompany that? Making sure we've got people inserted at the appropriate place to control the risk there.

**Moderator:** You mentioned you want to get unmanned aircraft deployed. You mentioned electromagnetic. How soon before you have a deployed rail gun?

**Adm. Richardson:** Well, this rail gun thing. I need to --

**Moderator:** Is that Star Wars or --

**Adm. Richardson:** No, it's not Star Wars. We're down to kind of engineering the rail gun. We're moved beyond the science part. But I've got to tell you, I'm impatient with respect to this directed energy vector that we need to go down. The rail gun, once we get through these engineering challenges, will be kind of a magnificent weapon. Similarly with lasers, and similarly with these other directed energy types of things. So we've got some movement in that in this budget, but I want to accelerate that as much as we can. I think that's a big part of our future.

**Audience:** Otto Kreisher with Sea Power Magazine.

One of the big fights we're getting from the COCOMs is lack of submarines. Obviously you're trying to build two attack submarines a year, would like to do more [inaudible]. You've also got a plan to build unmanned undersea vehicles. How much of a role would those unmanned vehicles go to closing the gap you have in the tactical subs?

**Adm. Richardson:** I think they complement one another. Right? So if you can see a sort of a manned platform, an attack submarine for instance, being the hub of sort of a family of underwater vehicles. Some autonomous, some maybe tethered, some bigger that would have deployable payloads off of them, longer range. You can see that a single manned submarine would extend its influence quite a bit by virtue of doing something like that.

So there is this sort of complementary relationship that happens. We've got a big push forward in unmanned, both in the air and undersea, and on the surface for that matter in terms of how do we extend our reach and how do we reduce our risk, particularly to our sailors, by doing those sorts of things.

**Audience:** Sir, Byron [Inaudible], [Inaudible] Partners.

You talked about picking up the pace. I wonder if you can talk a bit more how you pick up that pace. Is it a resource issue? Is it a cultural issue? Do you have the authorities from Congress to do that?

**Adm. Richardson:** Yes, yes, and maybe.

I think what, I'll just give you some examples of some of the ideas that we're pitching right now.

One is this Rapid Prototyping and Experimentation Division, so this would be a team of technologists with a broad understanding of the portfolio, a broad spectrum of knowledge. And they would respond either to urgent needs from the combatant commander or even maybe more useful, looking for opportunities that maybe haven't been articulated yet in order to further our way forward.

And the idea is that we bring together these relatively mature technologies. I don't want to be in the science



immature technology phase. Then again, you know, combine them in ways that we can rapidly prototype. And you run them through some in-house testing, and then as soon as possible you get them out to the fleet. That's when the magic happens. There's nobody kind of more creative than the United States sailor and he'll think of a thousand ways that you can make it better. If you only added this, could you just cut down on this? You get them talking with the engineers and I think there's real potential there to come to some really valuable solutions early on.

Part of this, though, in terms of our culture will be that some of those ideas are just not going to work out. Right? And we've got to understand that that's part of the business, part of the model going forward. And as long as we can attach a lot of learning and lessons to that failure, then that's a success. Failure is not even the word for it I don't think.

And I'd much rather learn that lesson early when there's relatively little value in the program, right? I haven't integrated and built it and deployed it, et cetera, et cetera. And I'll pick up confidence as I go too, right? Because I'll have really wrung out all of the issues with it so that when I do go to some kind of a formal production line, program of record if you will, I'll have a lot more confidence that that solution's going to withstand the environment in which it's going.

So we have this Rapid Prototyping and Experiment effort going on to get started. Right?

Then for those ideas and maybe other technologies that would be appropriate for fast tracking into production, we're standing up what we're cleverly calling the Maritime Accelerated Capabilities Office, or MACO. These are, it's a fast track, if you will. An HOV lane for everybody in this audience that understands exactly what I mean. So that you can kind of go faster. You've got the resident authorities in place that can make quick decisions, that can maybe adjust the acquisition requirements because of the confidence that they have in the program and get things moving faster.

Then the secret plan is to over time migrate more and more programs out into the fast lane, right? Lean them down so

that they're more appropriate for the fast lane and soon nobody will be left in the slow lane. But you've got to think that through. You don't want that fast lane so close that it's not startlingly different, but you don't want it too far out that it just sort of dies on the end of the yardarm and doesn't flourish. So how far off the main track do you position that is work going forward.

**Moderator:** Unfortunately, I think we're going to have to leave it there.

I will ask you how Navy football's going to do next year before I let you go.

**Adm. Richardson:** You know, we had an awesome year this last year. Keenan Reynolds, he's just a real super star. A lot of graduates, so, but I've got a lot of faith in Coach Ken and I'm looking forward to a great season.

**Moderator:** Thank you do much.

**Adm. Richardson:** Thanks.

# # # #